

Curriculum Vitae

Inyoung Kim

Personal Information

Address: Department of Statistics
Virginia Tech
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Education and Training

July '05-June. '07 YALE UNIVERSITY New Haven, CT
Postdoctoral research associate in Biostatistics
Statistical Genomics and Proteomics

Aug. '97-Aug. '02 TEXAS A&M UNIVERSITY College Station, TX
Ph.D. in Statistics
Dissertation title "Statistical Methods for Matched Case-Control Studies
and cDNA Microarray"
Major Advisor: Raymond J. Carroll.

March '94-Feb. '96 YONSEI UNIVERSITY Seoul, Republic of Korea
M.S in Applied Statistics

March '90-Feb. '94 JEJU NATIONAL UNIVERSITY Jeju, Republic of Korea
B.S. in Mathematics (*Magna Cum Laude*)

Honor and Award

- International Biometric Society Best Paper in Biometrics by an IBS Member, 2018.
- Elected Member of the International Statistical Institute, 2017
- Distinguished Alumni Award, Jeju National University, 2012.
- Travel Award for Conference on Statistical Methods for Complex Data, 2009
- Biometrics Editor's selected paper for Biometrics Showcase, 2007

Professional Experience

- June '12- Present, Associate Professor of Department of Statistics, Virginia Tech, USA.
- Aug. '07- May, '12, Assistant Professor of Department of Statistics, Virginia Tech, USA.
- Mar. '03- Feb. '05, Research Associate at the Cancer Metastasis Research Center in Yonsei Medical School, Yonsei University, Republic of Korea.

Research Interests

- Semiparametric/Nonparametric modeling using regression/smoothing splines
- Nonlinear/linear mixed effect modeling for correlated/clustered data using Dirichlet process priors.
- Semiparametric/Nonparametric Bayesian modeling and computation in high dimensional data analysis
- Statistical Kernel Machine Learning
- Biostatistics (Biology, Environmental/Public Health, Epidemiology and Toxicology, Survival analysis)
- Bioinformatics (Functional Genomics, System Biology, Proteomics)

Editorial Activities

- Associate Editor (2012-present) for Communications for Statistical Applications and Methods
- Associate Editor (2012-present) for Korean Journal of Applied Statistics
- Associate Editor (2017-present) for Journal of Korean Data & Information Science Society
- Editor reviewer (2016-present) for Frontiers in Genetics: Bioinformatics and Computational Biology

Current Grants

- National Science Foundation: PI is A. Masoud and Co-PIs are Leyla Nazhandall and **Inyoung Kim**; 09/01/17-08/30/20, Fox-on-a-Chip: Fast Odor Chromatographic Sniffer; Total amount is \$ 329,999; Total amount of STAT is \$38,043.
- VT Institute for Society, Culture and Environment (ISCE): PI is Susan W. White and Co-PIs are **Inyoung Kim**, John Richey, Denis Gracanin, Martha Anna Bell; 12/01/2016-07/31/2017; Improving Emotion Recognition and Social Anxiety with Neurotechnology; Total amount is \$30,000 (Co-I 10%); Total amount of STAT is \$500 (for conference travel).
- National Institute of Health (NIH-R21R33): PI is Susan W. White and Co-PIs are **Inyoung Kim**, John Richey, Denis Gracanin, Martha Anna Bell; 09/01/2013-08/31/2019; Neurotherapy to Promote Recognition in Autism; Total amount is \$1,301,455 (Co-I 5%); Total amount of STAT is \$65,072.75.

Completed Grants

- National Science Foundation-Computer and Network Systems (NSF-CNS: award 1115839): PI is **Inyoung Kim** and Co-PI is Patrick Schaumont, 08/01/2011-07/31/2015 (with one year extension); TC: Small: New Directions in Side Channel Attacks and Countermeasures; Total amount is \$429,558 (PI 50%); Total amount of STAT is \$ 214,779.
- National Science Foundation-Computer and Network Systems (NSF-CNS: award 0964680): PI is Patrick Schaumont and Co-PI's are Leyla Nazhandali and **Inyoung Kim**; 08/01/2010-07/31/2014 (with one year extension); TC: Medium: From Statistics to Circuits: Foundations for Future On-Chip Fingerprints; Total amount is \$675,557 (Co-PI 33%); Total amount of STAT is \$ 222,934.
- Institute for Critical Technology and Applied Science (ICTAS): PI is Patrick Schaumont and Co-PI's: Leyla Nazhandali and **Inyoung Kim**; 07/01/2009-07/01/2010, Unique and Unclonable On-chip Identifiers; Total amount is \$98,015 (Co-PI 33%); Total amount of STAT is \$33,000.

Pending Grant

- National Institute for Occupational Safety and Health: PI is A. Masound and Co-Is are Linsey Marr, Inyoung Kim, Leyla Nazhandali, Julia Gohike, Intelligent Wearable Analyzer for Vapor Exposure (iWAVE) for Transportation Sector; 01/01/2018-12/31/2021; Total amount is \$2,342,024; Total amount of STAT is \$161,431.

Publications

Peer-Reviewed Journal Articles

Note: + and * indicate graduate student and corresponding author, respectively.

** indicate the co-first author,

1. L. Shan⁺ and **I. Kim**^{*} (2017). Joint Gaussian Graphical Model for unbalanced classes. *Computational Statistics and Data Analysis*,
2. Z. Fang⁺, **I. Kim**^{*}, and J Jung (2017). Semiparametric kernel based regression for evaluating interaction between pathway and covariate effect. *Journal of Agricultural, Biological, and Environmental Statistics* , To appear.
3. S. Peng⁺ and **I. Kim**^{*} (2017). Dual-Semiparametric regression using Weighted Dirichlet Process Mixture. *Computational Statistics and Data Analysis*, To appear.
4. F. Guo^{**}, **I. Kim**^{**}, and S. Klauer (2017). Semiparametric Bayesian models for evaluating time-variant driving risk factors using naturalistic driving data and case-crossover approach. *Statistics in Medicine*. (** equally contributed first author)
5. Z. B. Mackey, **I. Kim**, Elaadli, H.F.M (2017), Depletion of the extracellular-signal regulated kinase 8 homolog in *Trypanosoma brucei* protects mice from lethal infection, *Molecular & Biochemical Parasitology*. To appear.
6. A. Ortega Villa⁺ and **I. Kim**^{*} (2018). Semiparametric derivative varying coefficient model for matched case-crossover studies. *Journal of Applied Statistics*, To appear.
7. G.J. Pent, **I. Kim**, J. Fike (2018) Ewe lamb vaginal temperatures in hardwood silvopastures, *Agroforestry Systems*. To appear.

8. L. Cheng⁺, L. Shan⁺, and **I. Kim*** (2017). Multilevel Gaussian Graphical Model. *Journal of Statistical Planning and Inference*, to appear.
9. E. Park, **I. Kim**, and C. Spiegelman (2017). Source-specific exposure assessment by using Bayesian spatial multivariate receptor modeling for spatially correlated multi-pollutant data. *Technometrics*, to appear.
10. Q. Li, F. Guo, **I. Kim**, and S. Klauer (2017). A Bayesian latent class change-point model for novice teenage driving risk. *Journal of Applied Statistics*, to appear.
11. A. Ortega Villa⁺, **I. Kim***, and H. Kim (2017). Semiparametric time varying coefficient model for matched case-crossover studies. *Statistics in Medicine*, 36, 998-1013.
12. T. Bui, G. Li, **I. Kim**, K. Wen, E. Twitchell, S. Lei, A. Ramesh, M. Weiss, X. Yang, S. Clark-Deener, R. Choy, and L. Yuan (2017) Racecadotril reduces human rota-virus diarrhea and prevents body weight loss in neonatal gnotobiotic pigs. *Comparative Medicine*, 67, 1-8.
13. N. Johnson⁺ and **I. Kim*** (2017). Generalized linear models with covariate measurement error and unknown link function. *Journal of Applied Statistics*, 44, 833-852.
14. H. Mahmoud⁺, **I. Kim***, and H. Kim (2016). Semiparametric single index multi change points model with an application of environmental health study on mortality and temperature. *Environmetrics*, 27, 494-506.
15. L. Cheng⁺, **I. Kim***, and H. Pang (2016). Bayesian semiparametric model for pathway based analysis with zero inflated clinical outcomes. *Journal of Agricultural, Biological, and Environmental Statistics*, 21, 641-662.
16. Z. Fang⁺, **I. Kim***, and P. Schaumont (2016). Flexible variable selection for recovering sparsity in nonadditive nonparametric model. *Biometrics*, 72, 1155-1163. (**Best Paper Award in Biometrics for 2016**)
17. H. Zhang⁺ and **I. Kim** (2016). Adaptive rejection metropolis simulated annealing for detecting global maximum regions. *Methodology and Computing in Applied Probability*, 18, 1-19.
18. A. Trubanova, **I. Kim**, M. C. Coffman, M. Bell, J. A. Richey, S. LaConte, D. Gracanin, and S. White (2016). Perspective-taking and fear recognition, *Current Research in Psychology*, 6, 22-30.
19. Z. Fang⁺ and **I. Kim*** (2016). Bayesian ising graphical model for variable selection. *Journal of Computational and Graphical Statistics*, 25, 589-605.
20. H. Zhang⁺, Y. Wu, L. Cheng⁺, and **I. Kim** (2016). Hit and Run ARMS: adaptive rejection metropolis sampling with Hit and Run Random Direction. *Journal of Statistical Computation and Simulation*, 86, 973-985.
21. C. Park and **I. Kim*** (2015). Efficient resolution and basis selection in wavelet regression. *Computational Statistics*, 30, 957-986.
22. H. Pang, **I. Kim**, and H. Zhao (2015). Random effects model for multiple pathway analysis with applications to type II diabetes microarray Data. *Statistics in Biosciences*, 7, 167-186.
23. S. White, J. Richey, D. Gracanin, M. Bell, S. LaConte, M. Coffman, A. Trubanova, and **I. Kim** (2015). The promise of neurotechnology in clinical translational science. *Clinical Psychological Science*, 3, 797-815.

24. H. Zhang⁺, **I. Kim***, and C. Park (2014). Semiparametric Bayesian Hierarchical Models for Nonlinear Mixed Effects Model, with application to gastric emptying studies. *Journal of Applied Statistics*, 41, 2743-2760.
25. J. Chen⁺, **I. Kim**, G. Terrell, L. Liu, and G. Toth (2014). Generalized single-index mixed model for repeated measures data. *Journal of Nonparametric statistics*, 26, 291-303.
26. Y. Xu⁺, **I. Kim***, and P. Schaumont (2014). Adaptive Bayes sum test for the equality of two nonparametric functions. *Journal of Applied Statistics*, 41, 2639-2657.
27. **I. Kim***, H. Pang, and H. Zhao (2013). Statistical properties of semiparametric methods for evaluating pathway effects. *Journal of Statistical Planning and Inference*, 143, 745-763.
28. S. White, T. Ollendick, A. Albano, D. Oswald, C. Johnson, M. Southam-Gerow, **I. Kim**, L. Scahill (2013). Randomized controlled trial: multimodal anxiety and social skill intervention for adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 43, 382-394.
29. C. Park, **I. Kim***, and Y. Lee (2012). Error variance estimation in nonparametric regression under lipschitz condition and small sample size. *Journal of Statistical Planning and Inference*, 142, 2369-2385 (* corresponding author).
30. **I. Kim***, H. Pang, and H. Zhao (2012). Bayesian semiparametric regression models for evaluating pathway effects on clinical continuous and binary outcomes. *Statistics in Medicine*, 31, 1633-1651.
31. A. Maiti, **I. Kim**, and P. Schaumont (2012). A robust physical unclonable function with enhanced challenge-response set. *IEEE Transaction on Information Forensics and Security*, 7, 333-345.
32. **I. Kim***, H. K., Cheong, and H. Kim (2011). Semiparametric regression models for detecting effect modification in matched case-crossover Studies, *Statistics in Medicine*, 96, 1458-1468.
33. S. Ha, **I. Kim***, Y. Wang, and J. Xuang (2011). Applications of different weighting schemes to improve pathway based analysis. *Comparative and Functional Genomics*, 2011, 1-15.
34. **I. Kim***, N. D. Cohen, A. Roussell, and N. Wang (2010). A two-component nonlinear mixed effects model for longitudinal data, with application to gastric emptying studies, *Statistics in Medicine*, 29, 1839-1859.
35. L. Yuan, S. Honmab, **I. Kim**, S. I. Ishidad, J. T., Patton, A. Z., Kapikian, and Y. Hoshino (2009). Resistance to rotavirus infection in adult volunteers challenged with a virulent G1P1A[8], NSP4[B] virus correlated with serum IgG antibodies to homotypic VP7 and VP4, *Journal of Infectious Diseases*, 200, 1443-1451.
36. **I. Kim**, T. Park, and B. Kim (2009). The reanalysis of the donation data using the zero-inflated Poisson regression, *Korean Journal of Applied Statistics*, 22, 819-827.
37. Y. Liu, **I. Kim**, and H. Zhao (2008). Protein interaction prediction from diverse sources, *Drug Discovery Today*, 13, 409-416.
38. Y. Wang and **I. Kim** (2008). A bootstrap-based simple probability model for classifying network traffic and detecting network intrusion, *Security Journal*, 21, 278-290.
39. Y. Wang, M., Nathaniel, and **I. Kim** (2007). Profiling user behavior for intrusion detection using item response modeling, *Journal of Information Privacy and Security*, 3, 3-17.

40. **I. Kim**, Y. Liu, and H. Zhao (2007). Bayesian methods for predicting interacting protein pairs using domain information, *Biometrics*, 63, 824-833. (**Biometrics Editor's selected paper for "Biometrics Showcase"**)
41. Y. Wang, **I. Kim**, G. Mbateng, and S. Y. Ho (2006). A latent class modeling approach to detect network intrusion, *Computer Communications*, 30, 93-100.
42. B. Kim, **I. Kim**, S. Lee, S. Rha, and H. Chung (2006). Ranking candidate genes for the biomarker development in a cancer diagnostics, *Communications for Statistical Applications and Methods*, 14, 169-182.
43. **I. Kim**, S. Rha, and B. Kim (2006). Bayesian multilevel mixed effect model for analysis of gene expression data, *Communications for Statistical Applications and Methods*, 13, 701-718.
44. **I. Kim**, S. Lee, S. Kim, S. Rha, H. Chung and B. Kim (2006). Hotelling's T^2 statistic for feature subset selection in a cDNA microarray, *Bioinformatics and Biosystems*, 3, 165-170.
45. **I. Kim**, B. Kim, and T. Park (2006). The analysis of the number of donations based on the mixture of Poisson regression models, *Korean Journal of Applied Statistics*, 19, 1-12.
46. B. Kim, **I. Kim**, S. Lee, S. Kim, S. Rha, and H. Chung (2005). Statistical methods of translating microarray data into clinically relevant diagnostic information in colorectal cancer, *Bioinformatics*, 21 (4), 517-528.
47. **I. Kim**, Y. Choi, H. Chung, S. Rha, and B. Kim (2005). Statistical method of determining a cut off value between normal and disease groups, *Bulletin of Informatics and Cybernetics: Research Association of Statistical Sciences*, 36, 63-72.
48. W. S. Lim, S. L. Payne, J. F. Edwards, **I. Kim**, J. M. Ball (2005), Differential effects of virulent and avirulent equine infectious anemia virus on macrophage cytokine expression, *Virology*, 295-306.
49. J. L. Cargile, J. A. Burrow, **I. Kim**, N. D. Cohen and A. M. Merritt (2004). Effect of dietary corn oil supplement on equine gastric acid, sodium and PGE2 content before and during pentagastrin infusion, *Journal of Veterinary Internal Medicine*, 18, 545-549.
50. N. Metayer, M. Lhote, A. Bahr, N. D. Cohen, **I. Kim**, A. J. Roussel and V. Jullian (2004). Meal size and starch content affect gastric emptying in horses, *Equine Veterinary Journal*, 36, 436-440.
51. **I. Kim*** and N. Cohen (2004). Semiparametric and nonparametric modeling of effect modification in matched studies, *Computational Statistics and Data Analysis*, 46, 631-643.
52. **I. Kim**, N. Cohen and R. J. Carroll (2003). Semiparametric regression splines in matched case-control studies, *Biometrics*, 59, 1158-1169.
53. **I. Kim**, N. Cohen and R. J. Carroll (2002). Effect heterogeneity by a matching covariate in matched case-control studies: A method for graphs-based representation, *American Journal of Epidemiology*, 156, 463-470 .

Book Chapter

54. **I. Kim**, A. Maiti, L. Nazhandali, P. Schaumont, V. Vivekraj, and H. Zhang (2010). From Statistics to Circuits: Foundations for future physical unclonable functions, 55-78, *Towards Hardware Intrinsic Security : Foundation and Practice*, edited by A. Sadeghi, Springer Information Security and Cryptography Series.

55. **I. Kim**, Y. Liu, and H. Zhao (2009). Sparsity priors for protein-protein interaction Bayesian methods, *Bayesian Modeling in Bioinformatics*, Chapter 10, edited by Dipak Day, Bani K. Mallick, and Samiran Ghosh, Chapman& Hall/CRC.
56. Y. Liu, **I. Kim**, and H. Zhao (2009). Protein interaction predictions from diverse source, *New Development in Biostatistics and Bioinformatics: Frontiers of Statistics*, 159-178, Chapter 7, edited by Jianqing Fan, Xihong Lin, and Jun S. Liu, Chapman& Hall/CRC.
57. H. Pang, **I. Kim**, and H. Zhao (2008). Pathway-based methods for analyzing microarray Data., *Analysis of Microarray Data: A Network-Based Approach*, Chapter 13, edited by M. Dehmer and F. Emmert-Streib, John Wiley& Sons, Ltd.
58. B. Kim, S. Lee, **I. Kim**, S. Kim, S. Rha, and H. Chung (2004). Statistical issues in search for biomarkers of colorectal cancer using microarray experiments. *Recent Advances in Quantitative Methods for Cancer and Human Health Risk Assessment*, Chapter 20, edited by L. Edler and C. Kitsos, John Wiley& Sons, Ltd.

Peer-Reviewed Conference Proceedings Articles

59. S. Ha, **I. Kim**, and J. Xuang (2009). Enhancing pathway based analysis with different weighting schemes. *Proc. IEEE International Conference on Bioinformatics& Biomedicine*, Washington D. C., USA, Nov. 2009, 384-387 (Acceptance rate : 19%)

Peer-Reviewed Conference Abstract and Poster

1. Orloff MA, Coffman MC, Trubanova A, Ruloff M, White SW, Gracanin D, **Kim I**, Bell MA, LaConte SM, Richey JA (2015). Increased dorsomedial prefrontal cortex and precuneus activation precede correct emotion identification. Society for Neuroscience; October, 2015; Chicago, Illinois, USA.
2. Lee, E., Bernardo, N.L., Ho C., **Kim, I.**, Estacio, G (2015). Predictive Value of Ankle-Brachial Index in Diagnosing CAD in Patients at High Risk for Cardiovascular Disease: Comparison with Cardiac Stress Test; **1st Place, Winner of the Best Abstract Award of Poster Session** at 2015 Annual Conference of Virginia Council of Nurse Practitioner.

Manuscripts: Under Revision and Review

1. L. Shan⁺, L. Cheng⁺, and **I. Kim*** (2018). Multilevel-multi-class Gaussian graphical model. *Journal of Computational and Graphical Statistics*, Under Revision.
2. Y. Xu⁺, **I. Kim***, and R. J. Carroll (2017). Hybrid omnibus test for semiparametric single index model with high dimensional data. *Biometrics*, Under Revision.
3. J. Chen, T. Terrell, **I Kim**, and M. L. Daviglus (2017). Proportional Odds model with log-concave density estimation. *Statistica Sinica*, Under Revision.
4. N. Johnson⁺ and **I. Kim*** (2017). Semiparametric approaches for matched case-control studies with error-in-covariates. *Computational Statistics*, Under Revision.
5. H. Mahmoud⁺ and **I. Kim*** (2017). Semiparametric Nonseparable Spatial Single index model with closely located spatial area. Under review for *Computational Statistics and Data Analysis*

6. H. Mahmoud⁺, B.J. Kim⁺, and **I. Kim*** (2017). Robust nonparametric derivative estimator. Under review for *Computational Statistics and Data Analysis*
7. S. Peng⁺ and **I. Kim*** (2017). Probabilistic Weighted Dirichlet Process Mixture. Under review *Journal of Econometrics*
8. S. Peng⁺ and **I. Kim*** (2017). Weighted Dirichlet Mixture GARCH. Under review *JRSS-C* (* corresponding author)
9. C. Park and **I. Kim*** (2017). Robust difference based outliers detection. Submitted to *Scandinavian Journal of Statistics*
10. X. Ren, P. Ghassemi, Y. Kanaan, T. Naab, R. Copeland, R. Dewitty, S. Kurella, **I. Kim**, J. Strobl, and M. Agah (2017), High-throughput multi-constriction microfluidic channels array for biomechanical properties studies on breast cancer cell-lines and patients' primary tumor samples, Under Review for *Nature Communications*.
11. L. Zhang⁺ and **I. Kim*** (2017). Semiparametric Bayesian Kernel Survival Model for Evaluating Pathway Effects, Under review for *Statistical Methods in Medical Research*
12. B. J. Kim⁺ and **I. Kim*** (2018). Flexible Omnibus Semiparametric test in 1-M matched Case-Crossover Study with measurement error in covariate, Under review for *JASA*
13. **I. Kim**, B.J., Kim⁺, and Z. Fang⁺ (2018). Bayesian Ising Nonparametric Regression. To be submitted to *Bayesian Statistics*

Technical Reports

- **I. Kim**, S. Lee, S. Rha and B. Kim (2006). Developing a molecular prognostic predictor of a cancer based on a small sample of survival outcomes, Yonsei University in Republic of Korea, Technical report.
- **I. Kim**, S. Kim, Rha, H. Chung and B. Kim (2006). Statistical method of determining a cut off value between normal and disease groups in comparative genomic hybridization (CGH) array, Yonsei University in Republic of Korea, Technical report.
- **I. Kim** (2002). The lognormal distribution for ratio-based decisions and the quantitative analysis of cDNA microarray, Texas A& M University, Technical report.
- **I. Kim** and N. Cohen (2002). A graphical method for effect modification of geographic region in matched case-control studies, Texas A& M University, Technical report.

Work in Progress

- **I. Kim** and Z. Fang (2018). Bayesian Ising Multilevel Graphical Model
- **I. Kim** and R. J. Carroll (2018). Semiparametric Omnibus test for multi-pathway analysis
- **I. Kim** and H. Zhao (2018). Nonparametric Bayesian approach for protein-protein complex
- **I. Kim** and H. Kim (2018). Semiparametric functional analysis for the association between temperature and mortality in east Asia.
- **I. Kim**, K. Lee, and N. Cohen (2018). A Semiparametric dynamic functional model for Gastric emptying study.

- **I. Kim** (2018). Bayesian hierarchical model with unknown link for unbalanced matched case-crossover studies
- L. Zhang⁺ and **I. Kim*** (2018). The mixture of Semiparametric Bayesian Kernel survival model for pathway based analysis.
- J. Lin⁺ and **I. Kim** (2018). Bayesian multiple Graphical Model for multilevel network.
- J. Lin⁺ and **I. Kim** (2018). Gaussian process selection for multi-pathway analysis.
- W. Guo⁺ and **I. Kim** (2018). Semiparametric Functional variable selection in matched studies.

Invited Talk

- International Biometric Society, Best paper of Biometrics Showcase, *Barcelona, Italy*, July, 2018.
- Spatial Statistics Conference, Lancaster University, *England, UK*, July 4-7, 2017.
- Public Health Grand Rounds seminar, Virginia Tech, *Blacksburg, VA*, March 30, 2017.
- Dept of Genetics, Bioinformatics & Computational Biology (GBCB), Virginia Tech, *Blacksburg, VA*, Feb, 2017.
- Department of Statistics, Purdue university, *West Lafayette, IN*, Feb, 2017.
- Department of Public Health Sciences, Medical University of South Carolina, *South Carolina, SC*, Jan, 2017.
- Latent Statistical Meeting 2016: Measurement error model, *South Carolina, SC*, Oct 2016.
- Department of Mathematical Science, Seoul National University 2016: Lecture Series of Advanced Bayesian Approach for Modeling Finance Application Data, *Seoul, Korea*.
- Department of Mathematical Science, Seoul National University 2015: Semiparametric Bayesian Approach using Weighted Dirichlet Process Mixture for Finance Statistical Models, *Seoul, Korea*.
- Collaborative Research Center, Spectral Structures and Topological Methods in Mathematics, Bielefeld University 2014: Flexible variable selection for recovering the sparsity in nonadditive multivariate nonparametric model, *Bielefeld, German*.
- Department of Mathematical Science, Seoul National University 2013: Flexible variable selection for recovering the sparsity in nonadditive multivariate nonparametric model, *Seoul, Korea*.
- Department of Mathematics, Jeju National University 2012: Statistical research problems in Applied Mathematics, *Jeju, Korea*
- The 3rd international conference 2012 organized research center for data science in Korea: Flexible variable selection for recovering the sparsity in nonadditive multivariate nonparametric model, *Seoul, Korea*.
- The 21st ICSA Applied Statistics Symposium 2012: The mixture of nonlinear mixed effects models for gastric emptying curves, *Boston, MA*

- International Conference and Exhibition 2012 on Biometrics & Biostatistics: Flexible variable selection for recovering the sparsity in nonadditive multivariate nonparametric model, *Omaha, Nebraska*.
- (Travel Award) Conference on Statistical Methods for Complex Data in 2009: Sparsity prior for protein-protein interaction, *College Station, TX*.
- Joint Statistical Meeting 2007: Biometrics ShowCase Papers: Bayesian Methods for Predicting Interacting Protein Pairs Using Domain Information, *Salt Lake City, UT*
- 39th Symposium on the Interface: Computing Science and Statistics 2007: Semiparametric methods for pathway analysis, *Philadelphia, PA*

Topic Contributed Talk

- Semiparametric regression in Matched Case-Crossover Study Section: Joint Statistical Meeting 2017: Semiparametric Bayesian model for unbalanced matched case-crossover studies, Baltimore, MD.
- Transportation Statistics Section: Joint Statistical Meeting 2011: Conditional logistic mixed effects model for matched case-crossover studies with traffic accident application, Miami, FL.

Contributed Talk

- Joint Statistical Meeting 2016: Statistical Analysis of Air Pollution Data, Baltimore, MA.
- Joint Statistical Meeting 2016: Statistical Analysis of Air Pollution Data, Chicago, IL.
- Joint Statistical Meeting 2016: Estimation and Learning in Graphical Models, Chicago, IL.
- Joint Statistical Meeting 2016: Advanced Statistical Methods for Marketing, Chicago, IL.
- Joint Statistical Meeting 2016: Nonparametric Methods with Nonstandard Assumptions and Conditions, Chicago, IL.
- Joint Statistical Meeting 2016: Weighted Dirichlet Process Mixture GARCH, Chicago, IL.
- Joint Statistical Meeting 2015: Semiparametric Weighted Dirichlet Process Mixture Model, Seattle, WA.
- Joint Statistical Meeting 2015: Semiparametric Bayesian Hierarchical Frailty Model for Evaluating Pathway Effects on Survival Time, Seattle, WA.
- Eastern North American Region/International Biometric Society 2014: Semiparametric non-separable single index model for spatial-temporal model, Baltimore, MD.
- Joint Statistical Meeting 2014: Semiparametric Varying Coefficient model for matched case-crossover studies, Boston, MA.
- Joint Statistical Meeting 2014: Joint Adaptive Gaussian Graphical Method for Unbalanced Multi-Class, Boston, MA.

- Joint Statistical Meeting 2014: Semiparametric Spatial Single Index Model, Boston, MA.
- Joint Statistical Meeting 2013: Semiparametric single index change point, Montreal Canada
- Joint Statistical Meeting 2013: Semiparametric single index change point, Montreal Canada
- Joint Statistical Meeting 2012: Error Variance Estimation in Nonparametric Regression under Lipschitz Condition and Small Sample Size, San Diego, CA
- Joint Statistical Meeting 2011: Conditional logistic mixed effects model for matched case-control studies with traffics accident application, Miami, FL
- Joint Statistical Meeting 2011: Regression Splines for 1-1 Matched Case-Control Studies with Measurement Error, Miami, FL.
- Joint Statistical Meeting 2010: Nonparametric Bayesian Methods for Measurement Error, Vancouver, BC.
- Eastern North American Region/International Biometric Society 2010: Conditional logistic mixed effects model for unbalanced matched case-control studies, New Orleans, LA
- Joint Statistical Meeting 2009: Semiparametric regression spline models for detecting effect modification in matched crossover studies, Washington, DC
- Eastern North American Region/International Biometric Society 2009: Sparsity prior for protein-protein interaction, San Antonio, TX
- US-Korea Conference on Science, Technology and Entrepreneurship 2008: Statistical methods for protein-protein interaction, *San Diego, CA*
- Eastern North American Region/International Biometric Society 2009: The mixture of nonlinear mixed effects models for gastric emptying curves, *Arlington, VA*.
- Eastern North American Region/International Biometric Society 2007: Semiparametric methods for pathway analysis, *Atlanta, GA*.
- Joint Statistical Meeting 2006: Statistical methods for protein-protein interaction, Seattle, WA.
- International Chinese Statistical Association Symposium, 2006: Statistical methods for protein-protein interaction, *Storrs, CT*.
- Korean Society for Bioinformatics on fall 2004: Statistical analysis for feature subset selection, *Daesun, Korea*.

Teaching

- Stat6514: Advanced Topics in Regression (spring 12, 14, 16-18), Virginia Tech.
- Stat 6474: Advanced Topics Bayesian Statistics (spring 08, 09, 10, 12, 13), Virginia Tech.
- Stat5514: Topics in Regression (fall 15-17), Virginia Tech.
- Stat5404: Nonparametric Statistics (spring 11,13), Virginia Tech.

- Stat 5044: Regression and ANOVA (fall 07-17), Virginia Tech
- Stat 4505/5504G: Applied Multivariate Analysis (fall 13), Virginia Tech.

Former and Current Ph.D Students

- 14. Byung-Jun Kim (2016-present): PhD. Candidate, Semiparametric omnibus test for high dimensional measurement error model.
- 13. Wenyu Gao (2016-present): PhD., Some Advanced Nonparametric Bayesian modeling via Weight Dirichlet Process.
- 12. Jiali Lin (2016-present): PhD., Bayesian multilevel-multiclass Graphical Model.
- 11. Lin Zhang (2012-present): PhD. Candidate, Semiparametric Bayesian Approach for evaluating high-dimensional variables on survival time.
- 10. Peng Sun (2011-2016): PhD., Weight Dirichlet Process in semiparametric regression, Freddie Mac, Quantitative Modeling Analyst.
- 9. Liang Shan (2010-2016): PhD., Joint Gaussian Graphical Model, Assistant professor in Epidemiology and public health, Biostatistician, Edward Via College of Osteopathic Medicine (VCOM)
- 8. Ana Maria Ortega Villa (2010-2015): PhD., Semiparametric time varying spatial model in matched case-crossover. Postdoc associate at NIH
- 7. Yangyi Xi (2009-2014): PhD., Frequentest-Bayesian Hybrid Tests in Semiparametric and Non-parametric Models, Quantitative Modeling Analyst, Bank of America.
- 6. Hamdy Mahmoud (2009-2014): PhD., Some Advanced Semiparametric Single-Index Modeling for Spatially-Temporally Correlated Data. Assistant professor at Assiut University, Egypt.
- 5. Lulu Cheng (2008-2013): PhD., Multilevel Gaussian Graphical Model, Senior Statistician in Monsanto
- 4. Zaili Fang (2008-2012): PhD., Some Advanced Model Selection Problems on Nonparametric/Semiparametric Models for High Dimensional Data, Vice President in Morgan Stanley
- 3. Nels Johnson (2008-2012): PhD., Semiparametric Regression Methods with Covariate Measurement Error, Mathematical Statistician, US Forest Service, PSW Research Station
- 2. Huaiye Zhang (2008-2011): PhD., Bayesian Approach to Dealing with Mixture Model Problems, Senior Statistician in Microsoft
- 1. Jinsong Chen (2007-2010): PhD., Semiparametric methods for the Generalized Linear Models, Senior Biostatistician in UIC medical school.

Former MS. Students

- 2. Chongrui Yu (2007-2012): MS, Data Analyst, Farmers Insurance.

- 1. Yi Chao (2007-2008): MS, China

Professional Activities

- Program committee in Bioinformatics 2010-present (“International conference on Bioinformatics Models, Methods and Algorithms”)
- Chair of Contributed Section “High-Throughput Biological Data Analyzed with Bayesian Methods” in JSM 2017
- Program organizer and Chair of Topic Contributed Section “Semiparametric regression in matched case-crossover studies” in JSM 2017
- Chair of Big Data and Data Science section in Conference on Statistical Practice, ASA, Feb, 2017
- Program organizer of poster section in Korean-American Scientists and Engineers Association Virginia Regional Conference 2013
- Chair of Topic Contributed Section “Transportation Statistics” in JSM 2011, Miami, FL.
- Chair of section “ Clustered data methods” in Eastern North American Region (ENAR) 2010
- Chair of section “ Categorical data analysis” in ENAR 2010
- Chair of section “ Statistical analysis of metabolomics data” in ENAR 2009
- Chair of section “Biostatistics” in International Chinese Statistical Association (CSA) 2006
- Reviewer for NSF career proposals in 2009, 2010
- Reviewer panelist for NIH proposal in 2015
- Referee for
 - *American Journal of Veterinary Research,*
 - *American Statistician,*
 - *Annals of Applied Statistics,*
 - *Biometrics,*
 - *Bioinformatics,*
 - *BMC Bioinformatics*
 - *Canadian Journal of Fisheries and Aquatic Sciences,*
 - *Communication in Statistics of Simulation and Theory,*
 - *Computational Statistics and Data Analysis,*
 - *Cryptographic Hardware and Embedded Systems,*

- *IEEE Transactions on Reliability*,
- *Journal of American Statistical Association*,
- *Journal of Applied Statistics*,
- *Journal of Computational and Graphical Statistics*,
- *Journal of Econometrics*,
- *Journal of Korean Statistical Society*,
- *Journal of Nonparametric Statistics*,
- *Mathematical Methods for Statistics*,
- *Journal of Modern Applied Statistical Methods*
- *Journal of Multivariate Analysis*,
- *Statistical Methodology*,
- *Statistics in Biosciences*,
- *Statistics in Medicine*,
- *Statistics & Probability Letters*,
- *Statistical Applications in Genetics and Molecular Biology*,
- *Technometrics*
- *Korean Journal of Applied Statistics*

Departmental/University Services

- Faculty advisor of VT chapter of Mu Sigma Rho (2016-present)
- Teaching Evaluation Chair (2017-present)
- Qualifying exam committee (2007-present) and chair (2010-2017), Search committee (2009, 2011-2014, 2016-2018), Personal committee (2015-2017), Co-chair of Mu Sigma Research Seminar for the Corporate Partners conference (2008-2009, 2013-2014), Master oral exam committee (2007-present).
- Current Ph.D committee in Dept of Statistics for the following students during 2013-present: Ting Gun, Yi Li, Yizhi Sun
- Completed Ph.D committee in Dept of Statistics for the following students during 2008-2017: Ning Wang, Yajuan Chen, Mark Seiss, Zhibing Xu, Youjia Fang, Yuanyuan Duan, Dengfeng Zhang, Khaled Bedair, Qing Li, Yimeng Xie, Stephen Loftus, Xiaoning Kang, Angang Zhang, Yuhyun Song, Mia Yuan, Tianlei Chen, Marco Carzolio, Jinhui Sun, Yuhyun Song, Zhenguo Gao.

- MS Oral Committee in Dept of Stat for seven students during 2016: Yiming Zhang, Kyke Wedd, Amanda McGough, Deelan Jalil, Xin Feng, Zhe Wang, Lata Kodali, Jennifer West, Alexander Durbin, Spctt Singleton, Richard Ngaya.
- Completed MS Oral Committee in Dept of Stat for more than 50 students during 2008-2015.
- Ph.D committee in Other Depts for the following students:
 - Dept of Genetics, Bioinformatics & Computational Biology (GBCB): Haktan Suren (2015-2017)
 - Dept. of Electrical and Computer Engineering: Sook Ha (2008-2012), Vidya Rajagopalan (2009-2010), Abhranil Maiti (2008-2011), Byung O Kang (2012-2014), Jaesung Jung (2012-2014), Mostafa (2012-2014), Ganta Dinesh (2014-2015), Saidhiraj Amuru (2014-)
 - Dept. of Plant Pathology, Physiology, & Weed Science: Rongman Cai (2008-2012)
 - Dept of Forest Resource and Environmental Conservation: Gavin Corral (2014-2015), Micky Allen (2014-2016), Ram Thapa (2011-2013), Sheng-I Yang (2014-2016)
 - Educational Research & Evaluation: Sarah Wang (2010-2013), Sunha Kim (2010-2014)

Membership

- American Statistical Association (ASA)
- International Biometric Society
- International Society for Bayesian Analysis (ISBA)
- Institute of Mathematical Statistics (IMS)
- Mu Sigma Rho, National Statistics Honor Society
- Sigma Xi
- Korean International Statistical Society (KISS).